Experiment No. 2
Demonstration of the working of HTC Vive, Google Cardboard, Google Daydream and Samsung gear VR
Date of Performance:
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Aim: Demonstration of the working of HTC Vive, Google Cardboard, Google Daydream and Samsung gear VR

Theory:

HTC Vive

fig.: HTC Vive pro 2 headset

VIVE, sometimes referred to as HTC Vive, is a virtual reality brand of HTC Corporation. It consists of hardware like its titular virtual reality headsets and accessories, virtual reality software and services, and initiatives that promote applications of virtual reality in sectors like business, arts, and video gaming.

The brand's first virtual reality headset, simply called HTC Vive, was introduced as part of a collaboration with Valve Corporation, implementing its SteamVR hardware and software ecosystem. It was unveiled during HTC's Mobile World Congress keynote in March 2015. Development kits were sent out in August and September 2015, and the first consumer version of the device was released in April 2016.It has since been succeeded by newer models with upgraded specifications. HTC has also released accessories that integrate with the Vive and SteamVR, including sensors for motion capture and facial capture.

In February 2022, HTC unveiled Viverse, a metaverse ecosystem comprising its 5G products, Vive VR devices, and related initiatives, as well as partners like ENGAGE and VRChat. VIVERSE is said to offer multiple routes into the metaverse by providing accessibility to virtual worlds from non-VIVE and non-VR devices like smartphones through software tools like VIVE Connect. Parental contrhttps://en.wikipedia.org/wiki/File:Vive_Pro_2_Headset.webpols will be available for metaverse users through a new app called VIVE Guardian.

Google Cardboard

fig.: Google Cardboard

Google Cardboard is a discontinued virtual reality (VR) platform developed by Google. Named for its fold-out cardboard viewer into which a smartphone is inserted, the platform was intended as a low-cost system to encourage interest and development in VR applications.Users can either build their own viewer from simple, low-cost components using specifications published by Google, or purchase a pre-manufactured one. To use the platform, users run Cardboard-compatible mobile apps on their phone, place it into the back of the viewer, and view content through the lenses.

The platform was created by David Coz and Damien Henry, French Google engineers at the Google Cultural Institute in Paris, in their 20% "Innovation Time Off". It was introduced at the Google I/O 2014 developers conference, where a Cardboard viewer was given away to all attendees. The Cardboard software development kit (SDK) was released for the Android and iOS operating systems; the SDK's VR View allows developers to embed VR content on the web as well as in their apps.

Through March 2017, over 160 million Cardboard-enabled app downloads were made. By November 2019, over 15 million viewer units had shipped. After the success of Cardboard, Google developed an enhanced VR platform, Daydream, which was launched in 2016. Following declining interest in Cardboard, Google announced in November 2019 that it would open-source the platform's SDK.In March 2021, the Google Store stopped selling Cardboard viewers. As of November 2021, third-party companies continue to sell compatible viewers.

Google Daydream

fig.: Google Daydream

Daydream is a discontinued virtual reality (VR) platform which was developed by Google, primarily for use with a headset into which a smartphone is inserted. It is available for select phones running the Android mobile operating system (versions "Nougat" 7.1 and later) that meet the platform's software and hardware requirements. Daydream was announced at the Google I/O developer conference in May 2016, and the first headset, the Daydream View, was released on November 10, 2016. To use the platform, users place their phone into the back of a headset, run Daydream-compatible mobile apps, and view content through the viewer's lenses.

Daydream was Google's second foray into VR following Cardboard, a low-cost platform intended to encourage interest in VR. Compared to Cardboard, which was built into compatible apps and offered limited features, Daydream was built into Android itself and included enhanced features, including support for controllers. Daydream was not widely adopted by consumers or developers, and in October 2019, Google announced that the Daydream View headset had been discontinued and that they would no longer certify new devices for Daydream.

Samsung Gear VR

fig.: Samsung Gear VR

The Samsung Gear VR is a virtual reality headset developed by Samsung Electronics, in collaboration with Oculus VR, and manufactured by Samsung. The headset was released on November 27, 2015.

When in use, a compatible Samsung Galaxy device acts as the headset's display and processor, while the Gear VR unit itself acts as the controller, which contains the field of view, as well as a custom inertial measurement unit, or IMU, for rotational tracking, which connects to the smartphone via USB-C or micro-USB. The Gear VR headset also includes a touchpad and back button on the side, as well as a proximity sensor to detect when the headset is on.

The Gear VR was first announced on September 3, 2014.To allow developers to create content for the Gear VR and to allow VR and technology enthusiasts to get early access to the technology, Samsung had released two innovator editions of the Gear VR before the consumer version.

Conclusion:-

The experiment aimed to demonstrate the functionality of four distinct virtual reality platforms: HTC Vive, Google Cardboard, Google Daydream, and Samsung Gear VR. HTC Vive, a product of HTC Corporation, has evolved over the years, offering high-quality VR experiences and an expanding metaverse ecosystem. Google Cardboard, though now discontinued, provided a cost-effective entry point into VR, with millions of users enjoying VR content through their smartphones. Google Daydream, another Google venture, integrated seamlessly with Android devices and offered enhanced features, but faced challenges in gaining widespread adoption. Finally, the Samsung Gear VR, developed in collaboration with Oculus VR, utilized compatible Samsung Galaxy devices as its display and processor, providing an immersive VR experience. Each of these platforms showcased the diverse spectrum of virtual reality experiences, from high-end immersive gaming with HTC Vive to affordable and accessible VR with Google Cardboard, Daydream, and Samsung Gear VR.